CLAIMS

1. An active power regulating system of a wind farm, the wind farm comprising an array of aerogenerators (Ai), a communications network (RS), and a monitoring and control system (ST), the system comprising:

- means for connecting to said monitoring and control system (ST),

- means for receiving data relative to the apparent power P_{out} put out by the farm at all times, and data relative to variables and states of the aerogenerators (Ai), from said monitoring and control system (ST),

- means for comparing said output apparent power P_{out} with a preset apparent power set-point P_{cons} of the farm,

- means for continuously adjusting said output apparent power P_{out}, such that this output apparent power P_{out} approaches at all times the preset power set-point P_{cons}.

2. A system according to claim 1, characterized in that said means for continuous adjustment of the output apparent power P_{out} comprise:

- means for calculating the regulation capability of the farm at every moment according to said data relative to the output apparent power P_{out} and said data relative to variables and states of the aerogenerators (Ai),

- means for selecting which aerogenerator or aerogenerators (Ai$_{selec}$) may be actuated, according to said data relative to variables and states of the aerogenerators (Ai),

- means for sending to said one or more aerogenerators (Ai$_{selec}$) selected via the monitoring and control system (ST) and the communications network (RS) of the farm, commands relative to:

  - regulation of the power set-point, or operating point, and/or

  - shutdown and startup.

3. A system according to any of preceding claims, characterized in that it comprises a safety control with:

- means for comparing said output apparent power P_{out} with a preset safety power set-point $P_{cons.seg}$ of the farm, so that if said P_{out} is greater than $P_{cons.seg}$, the system sends a shutdown command to one or more aerogenerators (Ai).

4. A system according to any of the preceding claims, characterized in that it comprises means for calculating the active power trend.

5. An active power regulation process of a wind farm, the wind farm comprising a group of aerogenerators (Ai), a communications network (RS), and a monitoring and control system (ST), the process comprising:

- receiving from said monitoring and control system (ST) data relative to the apparent power P_{out} put out at every moment by the farm, and data relative to variables and states of the aerogenerators (Ai),

- comparing said output apparent power P_{out} with a preset apparent power set-point P_{cons} of the farm,

- continuously adjusting said output apparent power P_{out}, so that this output apparent power P_{out} approaches at every moment the preset power set-point P_{cons}.

6. A process according to claim 5, characterized in that the continuous adjustment of the output apparent power P_{out} comprises:

- calculating the regulation capability of the farm for each moment according to said data relative to the output apparent power P_{out} and said data relative to variables and states of the aerogenerators (Ai),

- selecting which aerogenerator or aerogenerators (Ai_{selec}) may be actuated, according to said data relative to variables and states of the aerogenerators (Ai),

- sending to said one or more selected aerogenerators (Ai_{selec}), via the monitoring and control system (ST) and the communications network (RS) of the farm, commands relative to:

- regulation of the power set-point, or operating point, and/or

- shutdown or startup.

7. A process according to claim 6, characterized in that when the continuous adjustment of the output active power P_{out} implies sending commands relative to the shutdown of one or more aerogenerators (Ai), said selection is performed according to a set of pre-established criteria.

8. A process according to any of claims 5-7, characterized in that it comprises a safety control wherein:

- said output active power P_{out} is compared with a preset power safety set-point $P_{cons.seg}$ of the farm, such that if said P_{out} is greater than $P_{cons.seg}$, a shutdown command is sent to one or more aerogenerators (Ai).

9. A process according to any of claims 6-8, characterized in that regulation of the power set-point, or operating point, of said one or more aerogenerators is prioritized with respect to the shutdown or startup of another or other aerogenerators.

10. A process according to any of claims 6-8, characterized in that the shutdown or startup of said one or more aerogenerators is prioritized with respect to the regulation of the power set-point, or operating point, of another or other aerogenerators.